

Title (en)

APPARATUS FOR PULSED PLASMA-MEDIATED ELECTROSURGERY IN LIQUID MEDIA

Title (de)

GERÄT ZUR ELEKTROCHIRURGIE IN FLÜSSIGER UMGEBUNG UNTER VERWENDUNG VON PLASMA-PULSEN

Title (fr)

APPAREIL D'ELECTROCHIRURGIE EN MILIEU LIQUIDE UTILISANT UN PLASMA PULSE

Publication

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Application

**EP 00915856 A 20000223**

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Abstract (en)

[origin: WO0054683A1] This invention is a method for performing electrosurgery using sub-microsecond, high-power electrical pulses applied to an electrosurgical probe endface (60). The probe endface has an area of about 200 microns to 1000 microns<2>. The pulses have a duration less than 300 nanoseconds, and preferably have very fast rise times, and very fast fall times (e.g., less than 1000 nanoseconds). The pulses also have power dissipation greater than 500 Watts (e.g. 800 Watts to 2500 Watts), or voltage greater than 1.5 kV (e.g. 2kV to 3 kV). These pulse characteristics provide for reduced collateral damage, and effective cutting of tissues. Cutting is mainly provided by plasma streamers (65) which are formed on the probe tip end face. However, cutting is also provided by shock waves formed by the discharges. The method is applicable to microsurgical procedures such as retinal surgery and capsulotomy. Also disclosed are electrical circuits (21, 90) for performing the method.

IPC 8 full level

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